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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,958	12/05/2001	Miki Sasaki		5427

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EXAMINER

HA, NATHAN W

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,958

Applicant(s)

SASAKI ET AL.

Examiner

Nathan W. Ha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 0703.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The newly amended title is acceptable.

The amended abstract is acceptable.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaha as applied to claims 1-3 and 10-13 above, and further in view of Applicant's Admitted Prior Art (hereinafter, AAPA).

In regard to claims 1, 4-5, and 13, in figs. 1b-1c, Yamaha discloses a semiconductor device comprising:

a dicing region provided on a semiconductor substrate 1;

a plurality of first dummy patterns 4b1, for example, formed on the surface of the substrate and in the vicinity of the dicing region ; and

a plurality of second dummy patterns 5b, for example, formed above the substrate within the dicing region so as to correspond to the plurality of first dummy patterns.

Yamaha discloses all of the claimed limitations as mentioned above. Yamaha, however, does not expressly mention the structure of the dummy patterns, which have a structure substantially similar to the structure of the gate including a gate oxide film, a polysilicon film, and a SiN film, and the dummy patterns in the dicing region.

The AAPA, fig. 1, disclose a dummy layer in a dicing region that has a structure that substantially similar to the gate structure. It is convenient to have the same structure and materials for the gate and the dummy layer since these regions can be formed at the same time using the same process.

Therefore, it would have been obvious to use the dummy structure as taught by AAPA in Yamaha's device in order to take the advantage as mentioned above.

In regard to claim 2, the first and second patterns are each projected; see Yamaha's fig. 1C.

In regard to claims 8-9, Yamaha further discloses the dummy patterns include insulation films 6, SiO₂ deposited on the substrate.

In regard to claim 10, Yamaha further discloses the dummy patterns are arranged at regular intervals, see fig. 1D.

In regard to claim 11, the intervals of the dummy patterns is less than 15 μm since film 6 is 0.5 μm , see Yamaha's col. 5, line 63.

In regard to claim 12, the dummy patterns are formed along the dicing direction X1; see Yamaha's fig. 1H.

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4. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaha and AAPA as applied to claims 1-3 above, and further in view of Morita et al. (US 5,414,297, previously cited, hereinafter, Morita.)

In regard to claim 6, Yamaha discloses all of the claimed limitations as mentioned above except the isolation region is formed by each side of the plurality of the first dummy patterns. Morita, in figs. 6 and 20a, teaches a semiconductor device including a scribe area 2 having an STI structure 44 and a plurality of dummy patterns, the element isolation regions and the dummy patterns being arranged alternatively in order to provide the device chips having an excellence resistance to moisture and capable of prolonging the useful life of a dicing blade without increasing the number of manufacturing steps.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the structure of Morita et al. in Yamaha in order to provide the device chips having an excellence resistance to moisture and capable of prolonging the useful life of a dicing blade without increasing the number of manufacturing steps.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaha and AAPA as applied to claim 1-3 above, and further in view of Morita et al., '297.

In regard to claim 7, please see the above discussion regarding to claim 6.

Response to Arguments

6. Applicant's arguments filed 8/7/03 have been fully considered but they are not persuasive. For instance, Applicants submit that the prior art does not show the dummy patterns are in the dicing region. The above combination in fact discloses a dicing region 103 including dummy gate patterns, see fig. 1 of the AAPA.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (703) 305-3507. The examiner can normally be reached on M-TH 8:00-7:00(EST).

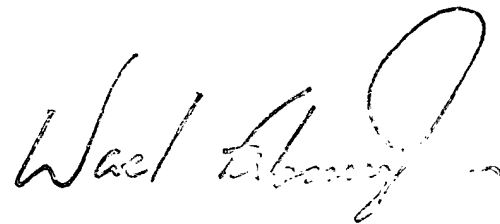
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and 308-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Nathan Ha
September 4, 2003

A handwritten signature in black ink, appearing to read "Wael Labadie". The signature is fluid and cursive, with a large loop at the end.

SUPERVISORY PRIMARY ENGINEER
TECHNOLOGY CENTER 2600